OIPE JC1&0
DEC 30 2004
PATENT & TRADEMARK OFFICE

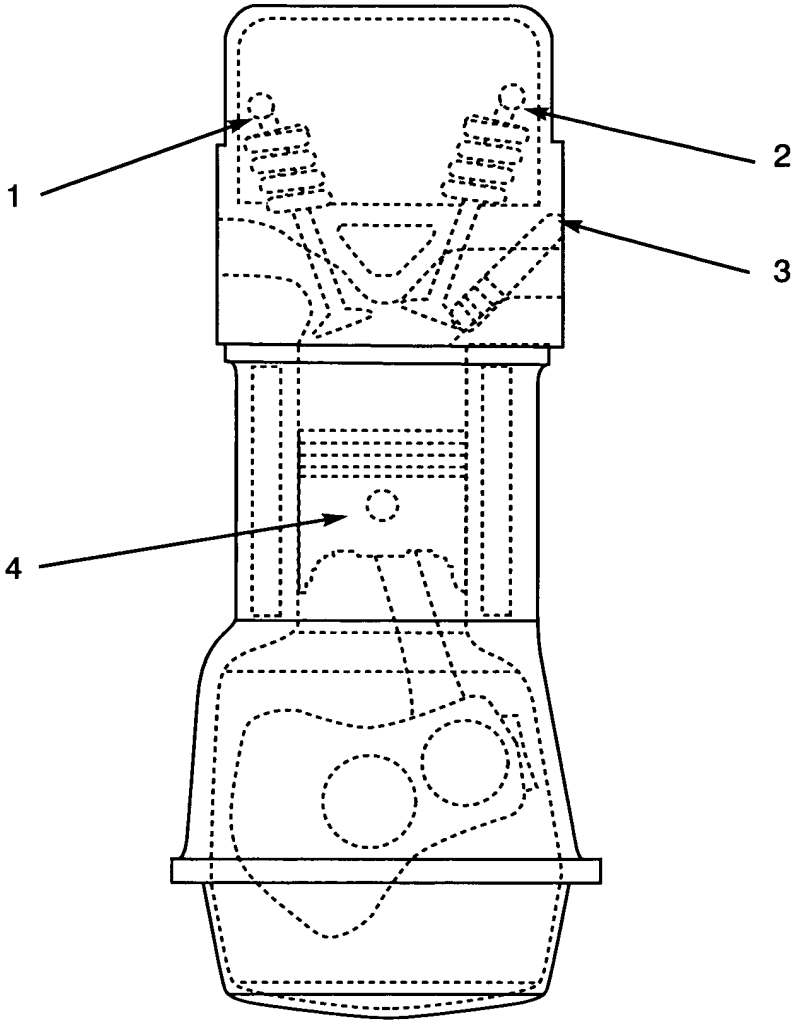

FIG.1

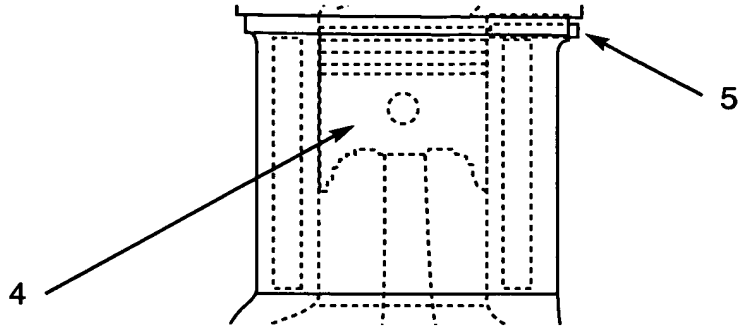

FIG.2

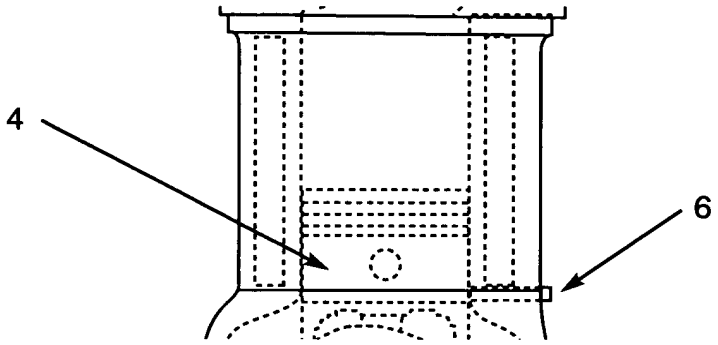

FIG.3

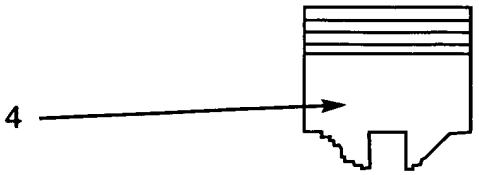

FIG.4

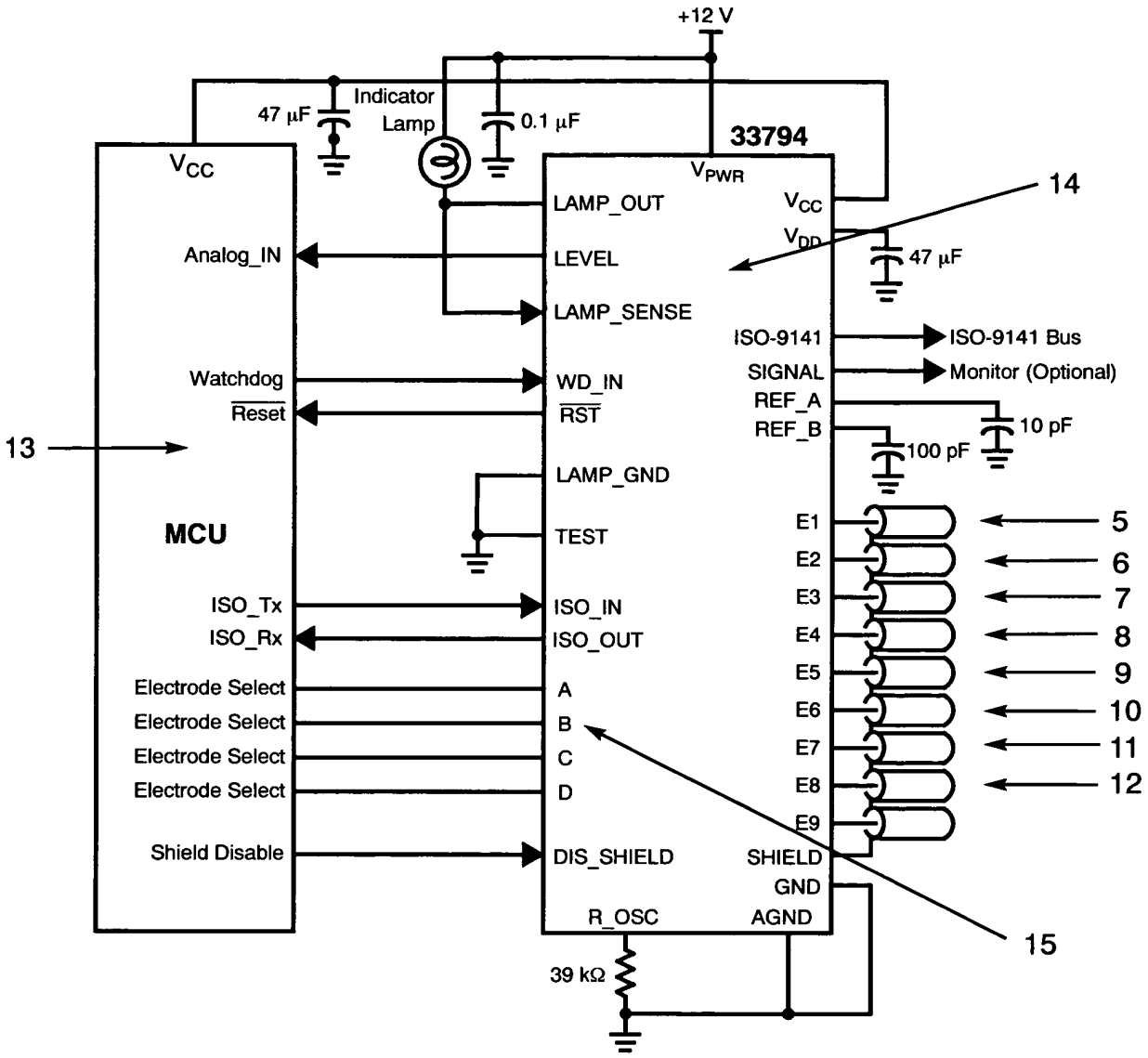
+12 V
47 µF
Indicator Lamp
0.1 µF
33794
VCC
VPWR
LAMP_OUT
VCC
14
VDD
47 µF
Analog_IN
LEVEL
LAMP_SENSE
ISO-9141
ISO-9141 Bus
SIGNAL
Monitor (Optional)
Watchdog
WD_IN
Reset
RST
REF_A
REF_B
10 pF
100 pF
13
LAMP_GND
MCU
TEST
E1
E2
E3
E4
E5
E6
E7
E8
E9
5
6
7
8
9
10
11
12
ISO_Tx
ISO_IN
ISO_Rx
ISO_OUT
Electrode Select
A
Electrode Select
B
Electrode Select
C
Electrode Select
D
Shield Disable
DIS_SHIELD
SHIELD
GND
R_OSC
AGND
15
39 kΩ

FIG. 5

Electrode		Intake	Exhaust	
Ai	Bi	Valve	Valve	Spark
0	1	1 (Open)	0 (Close)	0 (no)
0	0	0 (Close)	0 (Close)	0 (no)
1	0	0 (Close)	0 (Close)	1 (yes)
1	1	0 (Close)	1 (Open)	0 (no)

Note: i = 1, 2, 3, 4, ...

FIG. 6

Table 1. Electrode Selection

PIN/SIGNAL	D	C	B	A
Source (internal)	0	0	0	0
E1	0	0	0	1
E2	0	0	1	0
E3	0	0	1	1
E4	0	1	0	0
E5	0	1	0	1
E6	0	1	1	0
E7	0	1	1	1
E8	1	0	0	0
E9	1	0	0	1
REF_A	1	0	1	0
REF_B	1	0	1	1
Internal OSC	1	1	0	0
Internal OSC after 22 kΩ	1	1	0	1
Internal Ground	1	1	1	0
Reserved	1	1	1	1

FIG. 7